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1939

Proceedings of the Fifty-Third Annual Meeting of the Iowa Academy of Science, Held at Ames, April 21 and 22, 1939: Minutes of the 1939 Meeting

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PROCEEDINGS OF THE FIFTY-THIRD ANNUAL MEETING OF THE IOWA ACADEMY OF SCIENCE

Held at Ames, April 21 and 22, 1939

MINUTES OF THE 1939 MEETING

The fifty-third meeting of the Iowa Academy of Science was called to order by President J. N. Martin in Room 5, Physics Building, Iowa State College at 10:30 A.M., April 21, 1938. The following committees were appointed:

Necrology: H. D. Hughes, Eversole, Lyons

Resolutions: T. C. Stephens, Doty, Gale

Nominations: Ben H. Peterson, McGaw, Sargent

After a welcome by Dr. H. V. Gaskill, Dean of Science of Iowa State College at 10:30 A.M., April 21, 1939, the general program of papers was presented, followed by adjournment until 11:00 A.M., Saturday for the business meeting. Dr. Herbert Osborn, the first president of the Academy, was the honored guest at the Academy dinner Friday evening.

The business meeting was called to order by President Martin at 11:00 A.M. in Room 5, Physics Building.

The reports of the Executive Committee, the Secretary-Treasurer, Auditing Committee, and Editor were read and accepted upon motion.

It was moved, seconded and carried that this Academy as a body express its appreciation to the Secretary and the Editor for their efficient work during the past year.

The reports of the Committees on Biological Survey, Conservation, Finance, High School Relations and Membership were read and approved, upon motion.

The report of the Committee on Necrology was read and adopted by a rising vote of respect to the members commemorated. The report carried the names of John Budd Wentz, and Arthur Alvin Bryan.

It was moved and seconded that the following amendment which had been duly presented to the membership be approved:

PROPOSED AMENDMENT OF THE CONSTITUTION OF THE IOWA ACADEMY OF SCIENCE

Sec. 3. --- Membership

First sentence to read as follows:

"The membership of the Academy shall consist of (1) honorary fellows, (2) fellows emeritus, (3) life fellows, (4) fellows, and (5) associates."

Add between second and third paragraphs: "Fellows emeritus may be elected at any annual meeting from among those fellows who have been members in good standing for twenty-five (25) years or more, upon their

nomination by the membership committee. The assent of three-fourths of the members present is required for their election."

Sec. 4. — Add new paragraph

"Fellow emeritus shall be exempt from fees."

The motion carried. E. D. Ball, F. E. Goodell and H. L. Bruner were elected to the status, "fellow emeritus."

The report of the committee on the date of publication of the Proceedings was read and approved.

Because of the inter-relations between the Academy and Science Day of Iowa State College, Dr. Martin was forced to leave the business meeting at 12:00 noon and Dr. McClenon took the chair.

The report of the nominating committee carried the following nominations:

President, R. B. McClenon, Grinnell
Vice-president, Charles Carter, Fairfield
Secretary-Treasurer, J. C. Gilman, Ames
Editor, Florence W. Nichols, Ames

A motion instructing the Secretary to cast the ballot of the Academy for the election of these members to office was carried unanimously.

The section chairmen announced the officers of their respective sections in 1939 to be as follows:

<i>Section</i>	<i>Chairman</i>	<i>Executive Committee</i>
Botany & Bacteriology	H. S. Doty	Louisa Sargent 1939-43
Chemistry, General, Physical	J. A. Baker	W. C. Oelke 1937-41
Chemistry, Organic, Biological	O. B. Read	Ben H. Peterson 1939-43
Geology	Neil A. Miner	C. S. Gwynne 1938-42
Mathematics	H. Van Engen	C. Gouwens 1936-40
Physics	Bert Miller	E. Hobart Collins 1938-42
Psychology	J. B. McGregor	E. E. Emme 1937-41
Science Teaching	C. J. Lapp	J. B. Culbertson 1938-42
Zoology	Winifred M. Gilbert	H. E. Jaques 1936-40

A motion that the policy of the Academy be adopted that papers which do not meet the rules of the Academy be excluded from the Proceedings at the discretion of the editorial committee was lost. Discussion indicated that the sentiment of the members present at the meeting was favorable to stricter enforcement but that this action was unnecessary.

On motion the meeting adjourned.

JOSEPH C. GILMAN, *Secretary*

REPORT OF THE EXECUTIVE COMMITTEE

The Executive Committee met in the Seminar Room, Physics Building, at 1:30 P.M., April 21st. President Martin presided. Gwynne, Oelke, Nichols, McClenon, Lantz, Jaques, Gouwens, Trowbridge, Emme, Culbertson, Coleman, Morehouse and Gilman were present.

The minutes of the Sioux City meeting were read and approved.

The report of the sub-committee on effectiveness of the Academy as an adjunct of the State Government was accepted.

The amendment to the constitution, which is to be brought before you by the membership committee, was recommended.

The Academy representative to the A. A. A. S. was authorized to take action on the delegation of authority to the Academy Conference for the erection of a council or governing board to care for the national interests of the Junior Academy.

Invitations from Coe College and Cornell College for the next meeting to be held April 19th and 20th, 1940 were considered. After discussion, the invitation from Cornell College was accepted.

The recommendations of the Finance Committee that the money granted the Committee on Biological Survey be taken from the current expense funds of the Academy and thus conserve the Endowment Fund was approved.

The A. A. A. S. grant for research was made to Dr. D. W. Morehouse for the mounting of an universal eye for scanning the heavens.

The committee moved that the Iowa State College library be commended upon the way it has cared for the Academy exchanges and that the librarian of the Iowa State College be designated the Librarian of the Academy.

Adjournment.

Respectfully submitted,

J. C. GILMAN, *Secretary*

REPORT OF THE MEMBERSHIP COMMITTEE

New Associates

Clifford Adams, 109 E. Prentiss, Iowa City; Irvin J. Anderson, 132 Welch Ave., Ames; D. W. Augustine, Botany Dept., Ames; Reeve M. Bailey, Dept. of Zoology, Ames; Virginia Barber, Dept. of Psychology, State University, Iowa City; J. Ivan Barney, 2703 Carpenter Ave., Des Moines; B. H. Beane, La Grande; C. A. Bengtson, Dept. of Geology, State University, Iowa City; Hugh Bennion, Dept. of Psychology, Ames; J. Robert Berg, 5 E. Fairchild, Iowa City; Benjamin H. Burma, Geology Dept., Ames; Gow M. Bush, Dept. of Zoology, State University, Iowa City; * John J. Bushnell, Sioux City; Cleo Byers, Physics Dept., Coe College, Cedar Rapids; Cornelia Cameron, Dept. of Geology, State University, Iowa City; Lester W. Cameron, 18 Beardshear Hall, Ames; Le Roy Cation, Dept. of Psychology, Ames; John Chellevald, Wartburg College, Waverly; L. M. Cline, Dept. of Geology, Ames; Wilbur Cline, Centerville; Elizabeth Coe, 924 Kirkwood Blvd., Davenport; W. A. Craft, Director, Regional Swine Breeding Lab., Ames; Aureal T. Cross, 16 Castle Hill, Waterloo; F. Leicester Cuthbert, Dept. of Geology, Ames; L. L. Danielson, Dept. of Botany, State University, Iowa City; Dan A. Davis, Dept. of Geology, State University, Iowa City; Lester T. Earls, Physics Dept., Ames; Paul R. Engle, 3523 Adams Ave., Des Moines; C. L. Fitch, Plant Lab., Ames; Joseph Foladare, Dept. of English, Ames; H. C. Fryer, Dept. of Mathematics, Ames; Donald Gordner, Iowa Wesleyan College, Ames; H. J. Gilkey, Engineering, Hall, Ames; Charles Gould, Jr., Botany Dept., Ames; Dr. J. G. Grant, College Hospital, Ames; Anne Hager, Dept. of Zoology, Ames; Orville Halvorson, Mt. Pleasant; Bena K. Hansen, 203 Campus Ave., Ames; Kenneth Heck, 2400 First Ave., N.E., Cedar Rapids; Herbert E. Hendriks, West Liberty; William L. Hershelman, Dept.

* Deceased.

of Geology, State University, Iowa City; Henry Huizinga, Dept. of Zoology, Ames; R. S. Jacobsen, Dept. of Mathematics, Ames; James F. Kamman, C214 East Hall, State University, Iowa City; W. B. King, Dept. of Chemistry, Ames; Robert M. Kosanke, 528 S. Prospect Blvd., Park Ridge, Illinois; Paul H. Lahr, Dept. of Chemistry, State University, Iowa City; H. L. Lantz, Pomology Subsection, Plant Lab., Ames; R. Wayne Leffler, Dept. of Psychology, Ames; Harry Lutz, Albany, Georgia; Malcolm McDonald, Dept. of Zoology, State University, Iowa City; Marcia McNee, Dept. of Education and Psychology, Morningside College, Sioux City; John A. Mears, 114 E. Market St., Iowa City; George Montross, Dept. of Chemistry, Grinnell College, Grinnell; Dr. V. O. Muench, Nichols; H. E. Nichols, Dept. of Horticulture, Ames; Dr. Stanley B. Niles, President, Iowa Wesleyan College, Mt. Pleasant; A. G. Norman, Dept. of Soils, Ames; Frank H. Oshlo, 2919-46th St., Des Moines; Carroll Padley, Mt. Pleasant; Robert W. Pearson, 2526 Knapp St., Ames; William N. Rice, Botany Dept., Ames; Dr. Walter Schaefer, Wartburg College, Waverly; Donald T. Schild, 221 Stanton Ave., Ames; Roy W. Simonson, Dept. of Soils, Ames; Arch Spradling, Dept. of Chemistry, Grinnell; Donald W. Statler, Cornell College, Mt. Vernon; Stanley Stolpe, Dept. of Zoology, State University, Iowa City; D. C. Stroud, Des Moines; Iola Tillapaugh, 1206 M. St., S.W., Cedar Rapids; Dr. G. Tintner, Statistics Lab., Ames; L. A. Underkoffler, Chemistry Dept., Ames; Athel G. Unklesbay, Dept. of Geology, State University, Iowa City; Arthur Vetter, Coe College, Cedar Rapids; J. A. Vieg, Dept. of Government and History, Ames; H. H. Voris, Davenport; Charles Wagner, 415 N. Park Rd., La Grange, Illinois; Albert L. Walker, 18 Beardshear, Ames; Richard G. Wendell, 18 Beardshear Hall, Ames; Philip W. West, State Water Lab., Iowa City; Margaret Woodrow, 2322 Baker St., Ames; Floy Woodyard, 1019-21st St., Des Moines; Lester Yoder, Chemistry Section, Ames; H. E. Zabel, 320 S. Sheffield Ave., Chicago, Ill., and I. L. Boyd, Botany Dept., Ames.

Transferred

Dr. N. G. Alcock, State University Hospital, Iowa City; Dr. M. E. Barnes, State University Hospital, Iowa City; Dr. Kate Daum, State University Hospital, Iowa City; Paul L. Errington, Zoology Dept., Ames; Grant O. Gale, Grinnell College, Grinnell; Paul C. Greene, Coe College, Cedar Rapids; Dr. H. M. Hines, State University Hospital, Iowa City; Paul E. Kambly, University High School, Iowa City; W. N. Keck, Coe College, Cedar Rapids; George Kyl, Bloomfield; Dr. D. M. Lierle, State University Hospital, Iowa City; R. B. McClenon, Grinnell College, Grinnell; E. M. MacEwen, State University Hospital, Iowa City; Howard V. Meredith, Psychology Dept., Iowa City; Ben H. Peterson, Coe College, Cedar Rapids; D. D. Pettit, University High, Iowa City; Dr. E. D. Plass, State University Hospital, Iowa City; R. W. Poulter, City High School, Iowa City; Dr. P. W. Salit, State University Hospital, Iowa City; Dr. H. P. Smith, State University Hospital, Iowa City; Dr. Lothrop Smith, Chemistry Dept., State University, Iowa City; R. W. Von Korff, 917 Locust St., Davenport, and Keith Weeber, State University Hospital, Iowa City.

New Fellows

Richard S. Bear, Chemistry Dept., Ames; Nelson B. Conkwright, Mathematics Dept., State University, Iowa City; Robert B. Gibson, State Uni-

versity Hospital, Iowa City; Mack T. Henderson, Grinnell College, Grinnell; L. O. Nolf, Zoology Dept., State University, Iowa City; Abe Pepinsky, Assoc. Prof., Music Education, University of Minnesota, St. Paul, Minn.; Leon M. Pultz, Botany Dept., Ames; R. C. Spivey, Geology Dept., State University, Iowa City; Dr. Henry Van Engen, State Teachers College, Cedar Falls, and Dr. Russell M. Wolfe, Marshalltown.

Reinstatement

Dr. T. C. Evans, Zoology Dept., State University, Iowa City; David L. Hill, Zoology Dept., State University, Iowa City, and J. Garth Johnson, Zoology Dept., State University, Iowa City.

REPORT OF THE SECRETARY 1938-1939

During the past year the Academy has made some very definite advances both physically and financially. In spite of a greater drain on our resources, with increases in almost all of the items in our expenditures, so that our total outlay was \$820.31 as compared to \$545.71 in 1937-38, we closed the year with a balance greater by \$8.71 than last year. This increase was made possible very largely by the greater promptitude among the membership in the matter of payment of dues. It is particularly gratifying to the treasurer that we are now living within our income and not drawing upon our reserves as was necessary during the past few years. A large part if not all the responsibility for this better showing lies outside the Treasurer's office and credit should be given to the proper person. I refer to the editor. Ever since taking office I have noted a marked correlation between the receipts from dues and the time of publication of the Proceedings.

With the distribution of volumes 43 and 44, the Proceedings are within shooting distance of being up-to-date. Volume 45 is in the hands of the binder and should be distributed shortly. (I shall not be satisfied, however, until the volume will appear within a year of the meeting.) Our position is stronger this year in that we have been able to set a deadline for the printer to receive the material for the volume. Such a line will enable us to penalize those dilatory persons who have slowed the publication in the past. We have also increased the number to be printed by 200 and they are to be uniformly bound. These material advances are most welcome. May the content be worthy. With more prompt publication and the restoration of our 400 pages we should attract a better and better quality of papers. The editor's report indicates the wide distribution that our Proceedings receive. We hold a high place among the Academies of the United States and one which we must strive to maintain.

Let me now briefly review for you the various activities of the Academy during the interval that has elapsed since the last meeting. Since the business of the Academy is largely in the hands of the Standing Committees, perhaps a review of the work of these committees will present the material in its best light. The Committee on Biological Survey has just published a new volume, "Plants of Iowa," which was initiated at the Sioux City meeting. In the meantime Professor Jaques, also, has published a new book on "Living things: How to know them." Since his first work on "How to know the insects" was made possible by the Academy, perhaps we may take a little credit for his further progress.

The Finance Committee has again proved its value in the rearrangements necessitated by the reorganization of the Midland Theater of Chicago whose bond the Academy held. Their advice and aid at such times are only to be appreciated by the treasurer, I expect.

The membership committee has been particularly active. In addition to their regular duties which they have pushed vigorously, they have considered the question of retirement of members. We are faced this year with the loss of three members of long standing because of retirement or illness. At present no machinery is available to do anything in such cases. The membership committee is bringing in a proposal of change in the constitution to care for these persons. I bespeak your approval.

The High School Relations Committee, which has the Junior Academy of Science of Iowa in its charge, has carried on as usual. The proposed entering of this field by the American Institute of the City of New York in its notice in Science gave them a bit of anxiety. However, much of their fear was removed by the affiliation of this Society with the A. A. A. S. on the same basis as the state academies. Further steps were taken by a committee of the Academy Conference of which your secretary is a member to assure the autonomy of the Junior Academies of the various states and to bring about a fine co-operation among the groups. The attitude of the American Institute has been very fair in its recognition of the work the Junior Academies have done and the Institute has generously offered to assist those organizations in many very material ways. However, certain machinery for making the arrangement workable remains to be erected. The Academy Conference of the A. A. A. S. seems to be the logical organization to sponsor such co-ordination and I recommend that your representative in that conference be given authority to carry on that work within that frame.

In this year when the legislature meets, the Legislative Committee has served us well. It voiced the opinion of the Academy in sustaining the State Geological Survey and has also put us on record as favoring a pension plan for the public school teachers of the state. I am sure that we should approve this action in that the Academy has taken a positive stand and made this stand known. As a state supported institution the Academy should accept its responsibility in scientific matters in the state.

During his term of office your president, Dr. Martin, as part of his contribution to the welfare of the Academy, has investigated the relationships of the Academy to other organizations in the state and nation. As you know we are affiliated with the American Association for the Advancement of Science and from them we receive approximately fifty cents a common member for use as a research grant. This year the sum is \$125.00. This amount is less than last year and the decrease might indicate that we have lagged somewhat in our effort to stimulate the membership of the Academy to participate in membership in the Association. May I urge that any of our members who are not also members of the Association investigate the advantages of such membership? I am convinced that such an investigation would result in a reaction that would benefit both the individual and the Academy.

What of our future? Should we consolidate our present gains and continue to strengthen our position in the state by further participation in those fields in which we are already engaged or should we attempt further

expansion? In the latter case, what courses are open for us? Can we by affiliation or otherwise bring the workers in related fields into closer contact with the Academy? There are today many societies in the state that are interested in some of the phases of science in which we also are engaged. A group that immediately comes to mind are the conservation societies. We have been pioneers in this field and as such perhaps might be the proper persons to approach them with the suggestion of affiliation. The amateur radio operators form a second group that might be interested in an association with a group of wider interests such as ours. Doubtless you can think of similar groups. Expansion might be advisable in another direction. In 1932 we sponsored the Junior Academy of Science of Iowa with comparative success. Is there a place in our organization for the science student at the undergraduate college level? Certain academies have sections especially designed to meet the needs of this group of students. Our constitution does not preclude them from regular membership in the Academy nor are our dues of such magnitude that they would be prevented from joining us on that ground. They have, however, a very clearly marked diffidence in presenting themselves or their work before the persons of greater maturity in science whom they picture as making up our membership. Could this difficulty be overcome by setting up a grade of membership for them and if it were set up would there be sufficient interest to enable the continuance of a group with the rapid turn-over in membership which the very composition of the personnel would entail? Questions such as these should no doubt be referred to the membership committee. I bring them up here that you may be informed upon these matters and will give that committee your best help in making up a program for the Academy.

In closing, may I call your attention to some of the minor irritations of the secretary-treasurer's office. First, and foremost, dues are payable at the meeting according to the Constitution. On March 14th of this year I deposited \$14.00 of dues that had accumulated since March 1st, the close of the fiscal year. The last billing of the membership was October 28 of last year. Is this four-month delay necessary? Second, ten volumes of the Proceedings for 1937 were returned by the postoffice or express company because the persons to whom they were sent had failed to let the secretary know that they had changed their address. I cannot follow a membership of seven hundred without their help. Third, removal from the state does not constitute resignation. As you will hear from the editor, we have members in all but six states in the union and three in foreign countries. Fourth, the dues pay the current expense of the Academy and do not cover cost of the Proceedings. The latter are printed by the state. When you pay your dues you do not buy the Proceedings. Finally, the executive committee is too large to function properly. With 19 possible members, 13 were present at their meeting in Sioux City, 10 at Dubuque, 14 at Iowa City, 11 at Grinnell, and 9 at Des Moines. Previous to that time this committee was differently constituted.

While there are nine representatives of the sections elected to this com-

	1934	1935	1936	1937	1938	1939
Section representation	4	4	5	5	6	7
Other officers	5	7	9	5	7	8
Total	9	11	14	10	13	15

mittee their attendance at the meeting of this body has only matched that of the other officers once in the five years this plan has been tried; and that year the vice-president was chairman of the Conservation Committee as well. Yet, this committee has charge of the operations and policies of the Academy. Is there not some way we can remedy this condition? Your secretary welcomes suggestions.

Except for these minor matters, the secretary-treasurer has had exceptional co-operation from the other officers and from the members of the Academy. He thanks you all for your generous helpfulness in the past and bespeaks its continuance toward your future officers.

Respectfully submitted,

JOSEPH C. GILMAN

REPORT OF THE TREASURER

March 1, 1939

CREDITS

Balance, March 1, 1938	\$ 327.49
Dues	586.21
A. A. A. S. Grant	150.00
Dividend Union Story Bank	51.40
Sales of Proceeding	40.22
Insect Survey	1.19

\$1156.51

DEBITS

Printing	\$ 106.54
Postage	92.31
Honoraria	250.00
Purchase back volumes	50.00
A. A. A. S. Grant	150.00
A. A. A. S. Meeting	63.10
Clerical Help	16.98
High School Relations Committee	41.69
Editorial Expenses	24.55
Default on Bond	15.00
Miscellaneous	10.14

\$ 820.31

Balance 336.20

\$1156.51

ENDOWMENT FUND

CREDITS

Balance March 1, 1937	\$ 357.85
Fees from fellows	40.00
Interest on bonds and savings	66.02
Dividend National Bank, Iowa City	42.45

\$ 506.32

HOLDINGS

Federal Farm Mortgage Bonds 64-----	\$ 500.00
Federal Farm Mortgage Bonds 49-----	500.00
Midland Theatre First Mortgage 3% of 1953-----	300.00
Midland Investment Corporation Preferred Stock	
Two (2) Shares----	200.00
Cash on hand-----	506.32
Total -----	\$2006.32

REPORT OF THE AUDITING COMMITTEE

March 8, 1939—The accounts of the Treasurer of the Iowa Academy of Science have this day been audited by the undersigned and found to be correct and in proper order.

(Signed) — GERTRUDE A. HERR
 MARTIN F. FRITZ
 C. S. GWYNNE, *Chairman*

REPORT OF THE EDITOR, APRIL 22, 1939

To the President and Members of the Iowa Academy of Science:

Volume XLV of the Proceedings of the Iowa Academy of Science was completed during the past year. It will soon be distributed. It included the address by President, Academy address and papers from the 9 sections of the Academy. The 310 pages (exclusive of the index) were used to publish 40 complete papers, 37 abstracts, five memorials, the list of members, and the program of the 1939 meetings.

All of the papers submitted by the Section Chairmen were published. The Editor expresses appreciation to those Section Chairmen and authors who carefully prepared their papers. An increased number of papers within the past years have shown marked improvement, both in construction and content.

It is necessary that at all times authors keep the editor informed as to their change of address. This request is made to avoid delay in having proof reach the desired destination.

The geographical distribution of the mailing list of the Proceedings of the Iowa Academy of Science as given in the report by the librarian is appended. (See pages 32 and 33.)

Respectfully submitted,
 FLORENCE W. NICHOLS, *Editor*.

THE REPORT OF THE IOWA STATE COLLEGE LIBRARY TO
 THE IOWA ACADEMY OF SCIENCE FOR THE YEAR
 ENDED MARCH 1, 1939

NUMBER OF INSTITUTIONS ON MAILING LIST

Domestic -----	106
Foreign -----	48

NUMBER OF PUBLICATIONS RECEIVED FROM THESE INSTITUTIONS

Domestic	-----168
Foreign	-----128

	296

NUMBER OF PUBLICATIONS RECEIVED IN DIRECT EXCHANGE

Domestic	----68	from 53	institutions
Foreign	-----30	"	22
	-----		-----
	98		75

INSTITUTIONS ON THE MAILING LIST FROM WHICH WE RECEIVED NOTHING
IN RETURN (GIFT COPIES)

- 8 U. S. Government Departments and Institutions
- 22 Libraries
- 2 Foreign Institutions (For abstracting)

—
32

NUMBER OF BACK VOLUMES OF THE PROCEEDINGS OF THE IOWA ACADEMY
OF SCIENCE SENT ON EXCHANGE

- 59 To Five Foreign Institutions
- 42 Volumes Received in Exchange from these Institutions

NUMBER OF COPIES SENT OUT OF IOWA ACADEMY OF SCIENCE

	<i>Vol. 43</i>	<i>Vol. 44</i>
Membership	620	618
Exchange	158	158
Subscription	12	12

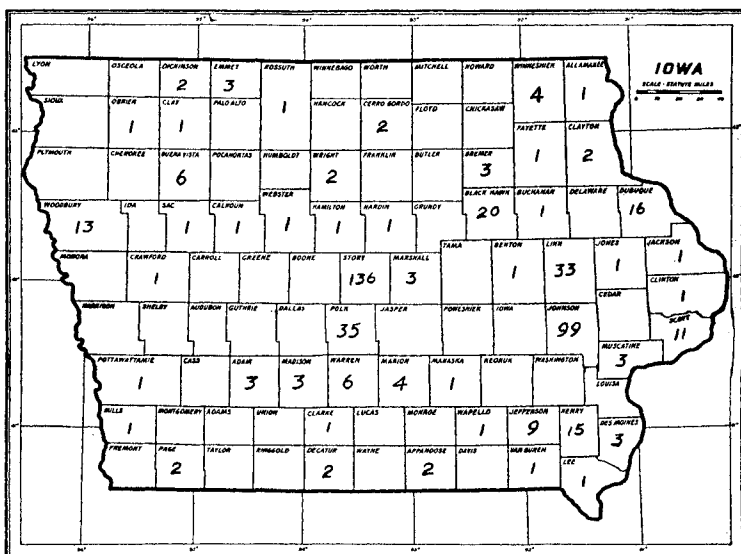


Fig. 1. Showing distribution of the Proceedings in Iowa.

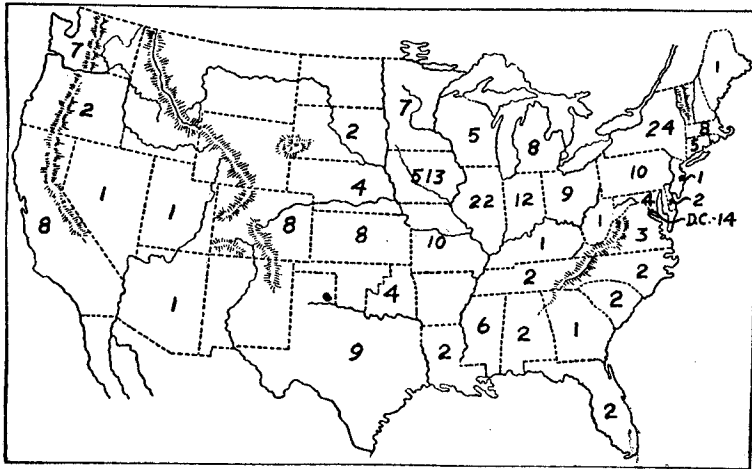


Fig. 2. Showing distribution of the Proceedings in the United States.

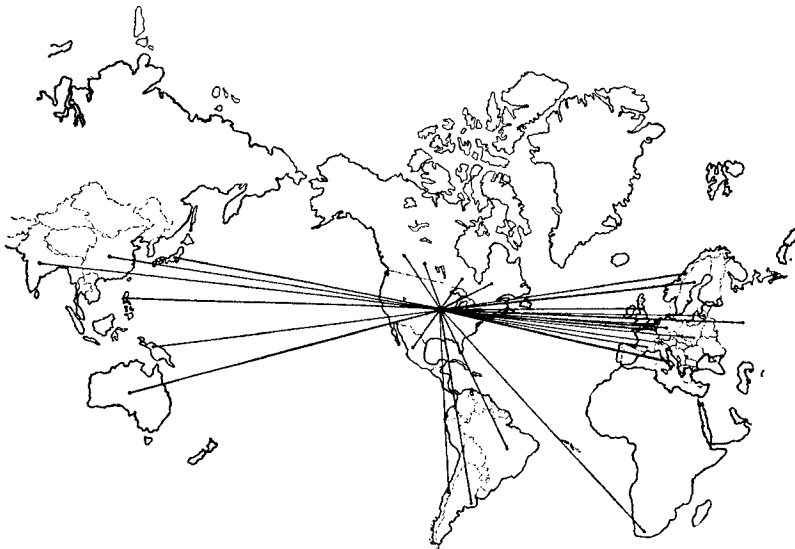


Fig. 3. Showing distribution of foreign institutions receiving the Proceedings.

REPORT OF COMMITTEE ON BIOLOGICAL SURVEY

Your Committee reports the publication of a second pamphlet: "Plants of Iowa," being a book of keys for naming the fern plants and flowering plants of Iowa, by Henry S. Conard of Grinnell College. The Academy publication fund of \$300.00 has been loaned to Professor Conard to assist in defraying the expense of printing. This sum is to be returned to the Academy when the sales of the book make this possible.

The Committee is convinced that a more definite agreement should be

made between the Academy and the authors of publications. Where the cost of publication is shared by both parties, both hold equities in the product. Your Committee believes that the Academy fund should be considered as an investment, sharing the risks with the author. We recommend a careful study of the problem, with a view to forming a definite plan of co-operation, and perhaps a form of agreement to be presented next year.

There is need for additional pamphlets on the natural history of the State. A booklet on fossils, or on rocks, minerals and fossils, or geology is suggested. The Committee will be glad to have manuscripts submitted for recommendation at the next meeting of the Academy.

It is suggested that the Academy and the Committee should urge upon the State Board of Conservation and the Highway Commission the use of the technical knowledge and experience of the members of the Academy and of this Committee in the planning of clearings and plantings along highways and in state parks, and in the choice of plant material for preservation and planting.

Respectfully submitted,

JAQUES,

STEPHENS

MELHUS,

CONARD, *for the Chairman.*

REPORT OF CONSERVATION COMMITTEE, APRIL 22, 1939

As usual it has not been possible for the Committee to meet during the year. There has been some correspondence among its members and between the Chairman and persons who are not members of the Academy, but are interested and active in Iowa conservation. The most important of this correspondence is a recent exchange of letters between the Chairman and Mr. M. L. Hutton, Director of the Iowa Conservation Commission.

It must be confessed that the Committee has not so far found a plan by which it or its members takes an active and effective part in conservation in the state. Suggestions are welcome for future consideration and use.

There is believed to be a field of usefulness in co-ordinating the work of the several agencies now doing conservational work in the state. The federal Soil Conservation Service, Bureau of Biological Survey, and Reclamation Service, and the National Resources Committee are especially in mind. Co-ordinating work for corresponding state agencies might be welcomed also. Perhaps a careful study of these and other federal and state agencies would be worth while.

The advisability and possibility of encouraging substitution of apple orchards for cultivated fields on the rough land of southern Iowa **has been** suggested for consideration.

The Committee should function to a larger extent than it does between the Academy meetings. At least the Academy should be represented at public hearings, etc., on proposed constructional projects of a conservational nature, such as the proposed high bridge dam on the Des Moines River.

Mr. Hutton suggests that Academy members might prepare scientific articles for the monthly magazine now being published by the Conservation Commission. They should be "couched in language understandable to the

layman." The major purpose of such articles would be to popularize science and to get out conservational information.

It is suggested that the members of the Committee exchange views during the year and that they meet for a discussion of policies on Friday morning preceding the 1940 meetings of the Academy.

Respectfully submitted,

J. M. AIKMAN

CHARLES CARTER

H. S. DOTY

C. R. KEYES

G. B. McDONALD

WINFIELD SCOTT

A. C. TROWBRIDGE

REPORT OF THE FINANCE COMMITTEE

The committee recommends that the Academy grant of \$300 to Dr. H. S. Conard for the publication of "Plants of Iowa" be taken from the "balance" of the current expense funds rather than from the cash accumulation of the endowment fund. This leaves a cash balance of \$506.32 in the Endowment Fund, from which it is recommended that \$500.00 be taken for the purchase of some U. S. Government security.

The Committee would like to have any suggestions from members of the Academy concerning further increase of the Endowment Fund.

U. A. HAUBER

E. A. LINDSTROM

H. S. NOLLEN

J. B. CULBERTSON, *Chairman*

REPORT OF THE RESOLUTIONS COMMITTEE

The Resolutions Committee submits the following report:

RESOLVED:

1. That the members of the Iowa Academy of Science express their gratitude to President C. E. Friley, of the Iowa State College, and his colleagues, for the facilities afforded in holding our fifty-third annual meeting.

2. That we also express our thanks to the Local Committee, Professor H. J. Plagge, Chairman, for its excellent service in making the detailed arrangements for the meeting.

3. That we also express our appreciation and thanks for the attention and services of WOI and WSUI in broadcasting the programs of the Junior Academy of Science throughout the year.

4. That we again recognize the faithful work of the officers of the Academy, and express our gratitude to them; and that we refer particularly to the Secretary and Editor for their labors during the interim of the meetings.

5. That we pledge our continued interest in and support of the Junior Academy.

6. That a copy of these resolutions be inserted in the Proceedings of the

Academy, and that copies be sent to all persons or institutions herein mentioned.

Respectfully,

G. O. GALE

H. S. DOTY

T. C. STEPHENS

REPORT TO THE IOWA ACADEMY OF SCIENCE FROM THE LEGISLATIVE COMMITTEE

Your legislative committee held no formal meetings during the year. All the business was transacted either by telephone or correspondence. Two specific matters came before the committee. First, the bill to discontinue the Iowa Geological Survey. At a public hearing on the bill held at the Savery Hotel, the interests of the Iowa Geological Survey were presented by Dr. Trowbridge. Other members of the legislative committee were present. The interests of the Academy and the Survey were so well presented, that as you will recall the bill was indefinitely postponed.

The other action had to do with the teachers annuity and pension. The chairman of the committee made every effort to bring the interests of the Academy before the sponsors' committee. Letters were written, legislators were interviewed and the bill passed the Senate. It failed, however, as you will recall, in the House. No further action was taken.

Respectfully submitted,

D. W. MOREHOUSE, *Chairman*

Legislative Committee

REPORT OF THE COMMITTEE ON DATE OF PUBLICATION PUBLICATION OF PROCEEDINGS

Irregularities and inconsistencies in the citations of the dates of the Proceedings of the Iowa Academy of Science have led to the preparation of the present report. Many of the volumes bear no date except that on which the meetings were held, though the date of actual publication varies through a period from three months (vol. 12) to two years and five months (vol. 27) later. Because of this discrepancy between the date of the meeting and the date of publication, citations of papers which have appeared in the Proceedings are usually incorrectly given. A correct bibliographic citation should show, not the date of presentation before a society, but the date of publication. Citations from the Proceedings are usually worded "Proc. Iowa Acad. Sci. for 1920," though in this case the volume was not published until late in 1922. In most instances this matter of date may make very little difference to anyone, but in such fields as taxonomy the dates associated with the publication of new species, of which there are many in the Proceedings, are significant enough to be worth accurate rendition. In any case, it often is more trouble to be right than to be wrong. May we suggest the following method of presenting citations from the Iowa Proceedings, a method of the type now employed by most scientific organizations:

Pammel, L. H. 1908. Some municipal water problems. Proc. Iowa Acad. Sci. for 1907, vol. 14: 115-146, fig. 1-4.

This makes it perfectly clear that while the paper was read in 1907 it did not appear in print until 1908.

Of the Proceedings, volumes 1-26 were printed by the State Printer. The 38th General Assembly, however, abolished that office, and the succeeding volumes have been published under contract with the Torch Press of Cedar Rapids. Volumes 1-22 bear dates on the title-pages, but the dates which appear on volumes 13-19 and 21-22 are incorrect, being one year in advance of actual publication. Publication dates do not appear on the succeeding volumes, numbers 23-44, and there is no way of determining, from the volumes themselves, when publication was effected, other than to assume that it was sometime within about two years of the date of the meeting.

The information as to the dates of publication which follows was largely secured from the accession dates of the volumes in the following six libraries, to the librarians of which grateful acknowledgement is due: State University of Iowa, Iowa State College, Iowa State Teachers College, Grinnell College, Coe College, and the Library of Congress. Distribution of the Proceedings has apparently been rather irregular. None of the libraries consulted possessed a complete set of the volumes as issued, though several of them have since filled out the series. The personal set of the Chairman of this Committee is lacking two volumes, but even the Library of Congress is no better off. Another source of information has been notes from minutes of the meetings of the Academy.

The Torch Press has supplied us with publication dates for volumes 27-44. However, in at least six instances library accession dates antedate these by as much as six months. For example, volume 32 was received by at least five of the six libraries consulted in January, 1927, yet Torch Press records show the volume not to have been published until July. The reply of the president of Torch Press is: "We are at a loss to know how the libraries could have received the Proceedings before they had been printed." Apparently, however, that is exactly what happened!

The accompanying table lists for each of the 44 volumes the date of the meeting, the number of the annual session, the number of pages, the probable date of publication as accurately as we have been able to determine it, and also inclusive dates between which the volume must have appeared. This list is, we feel certain, accurate for the year of publication given, except for volumes 8, 13, 32, and 40. Three of these were published during the December-January period, and thus the number of the year is in doubt. Volume 13, for which the least information has been obtained, may have appeared anytime within the two year period indicated. If any member or friend of the Academy could furnish the Committee with further information, it would be greatly appreciated.

We would like to suggest that Torch Press be instructed by the editor to print the date of publication of volume 45 and succeeding ones in the customary position at the bottom of the title-page.

Respectfully submitted,

Committee on the date of publication of Proceedings,

W. A. ANDERSON

ADA HAYDEN,

MARTIN L. GRANT, *Chairman*.

Proceedings of the Iowa Academy of Science

Vol. No.	Date of Meeting	Session Number	Number Pages	Probable Publication Date	Published After	Published Before
1	Dec., 1893	8	142	June-J'y, 1894	Jan. 1, 1894	July 13, 1894
2	Dec., 1894	9	225	July, 1895	Jan. 15, 1895	July 29, 1895
3	Jan., 1896	10	230	July-Au., 1896	Feb. 15, 1896	Aug. 5, 1896
4	Dec., 1896	11	242	August, 1897	Jan. 28, 1897	Aug. 30, 1897
5	Dec., 1897	12	248	Nov., 1898	Feb. 15, 1898	Nov. 8, 1898
6	Dec., 1898	13	234	April, 1899	Jan. 1, 1899	May 3, 1899
7	Dec., 1899	14	212	Dec., 1900	Jan. 1, 1900	Dec. 26, 1900
8	Dec., 1900	15	278	Dec., 1901	Jan. 1, 1901	Jan. 15, 1902
9	Dec., 1901	16	244	1902	Jan. 20, 1902	Dec. 30, 1902
10	Dec., 1902	17	178	1903	Feb. 20, 1903	June 1, 1903
11	April, 1904	18	xi, 282	October, 1904	Aug. 15, 1904	Oct. 15, 1904
12	April, 1905	19	xviii, 244	July 31, 1905	June 27, 1905	Aug. 3, 1905
13	April, 1906	20	xii, 279	1907	Oct. 1, 1906	Aug. 11, 1908
14	April, 1907	21	xv, 279	August, 1908	Jan. 1, 1908	Aug. 11, 1908
15	May, 1908	22	x, 189	April, 1909	July 20, 1908	April 26, 1909
16	April, 1909	23	x, 230	June, 1910	April 30, 1910	June 30, 1910
17	April, 1910	24	ix, 242	August, 1911	July 1, 1910	Sept. 1, 1911
18	April, 1911	25	x, 161	Feb., 1912	July 1, 1911	March 1, 1912
19	April, 1912	26	xi, 260	June, 1913	April 25, 1913	June 28, 1913
20	April, 1913	27	x, 340	Dec., 1913	July 1, 1913	Dec. 31, 1913
21	April, 1914	28	viii, 351	March, 1915	July 1, 1914	April 5, 1915
22	April, 1915	29	xii, 407	Mar.-Ap., 1916	May 1, 1915	April 8, 1916
23	April, 1916	30	623	Jan., 1917	May 1, 1916	Jan. 26, 1917
24	April, 1917	31	558	Feb., 1918	May 1, 1917	Feb. 27, 1918
25	April, 1918	32	687	January, 1920	April 25, 1919	Jan. 31, 1920
26	April, 1919	33	540	October, 1920	May 1, 1919	Nov. 3, 1920
27	April, 1920	34	414	Sept. 11, 1922	April 28, 1922	Oct. 1, 1922
28	April, 1921	35	320	April 30, 1923	April 27, 1923	May 25, 1923
29	April, 1922	36	379	Jan. 18, 1924	April 27, 1923	Mar. 7, 1924
30	April, 1923	37	490	June 14, 1924	May 1, 1923	Sept. 9, 1924
31	May, 1924	38	467	Mar. 18, 1926	May 3, 1924	April 17, 1926
32	May, 1925	39	454	Dec., 1926- Jan., 1927	April 30, 1926	Jan. 6, 1927
33	April, 1926	40	347	Sept., 1927	May 6, 1927	Sept. 22, 1927
34	May, 1927	41	383	July, 1928	May 4, 1928	July 31, 1928
35	May, 1928	42	356	Oct.-Nov. 1929	May 4, 1928	Nov. 6, 1929
36	April, 1929	43	393	Dec. 22, 1930	May 2, 1930	Apr. 17, 1931
37	May, 1930	44	410	May 28, 1931	May 1, 1931	Aug. 6, 1931
38	May, 1931	45	343	Nov. 25, 1932	May 1, 1931	Dec. 30, 1932
39	April, 1932	46	271	June, 1934	April 20, 1934	June 12, 1934
40	April, 1933	47	252	Jan., 1935	April 20, 1934	Jan. 14, 1935
41	April, 1934	48	331	Mar. 28, 1935	April 20, 1934	Apr. 13, 1935
42	April, 1935	49	221	July 27, 1936	April 3, 1936	Aug. 1, 1936
43	April, 1936	50	413	April, 1938	April 4, 1936	April 5, 1938
44	April, 1937	51	222	Oct. 15, 1938	April 17, 1937	Oct. 17, 1938

REPORT OF THE HIGH SCHOOL RELATIONS
COMMITTEE—1939

The work of the High School Relations Committee has been directed toward being of service to the Junior Academy. The Junior Academy movement has become national in its scope. There are a number of the other State Academies of Science that sponsor Junior Academies. Through the Academy Conference of the American Association for the Advancement of Science there is an effort being made to bring about a closer relationship between the State Academies in their Junior Academy work. The American

Institute of New York City is sponsoring an organization of high school science clubs in New York City and the eastern states. They have a large grant of money to further the science club work. Since they are extending their territory, there was developing some unnecessary duplication of efforts with the State Junior Academies. A conference of representatives from the State Academies which have Junior Academies and the American Institute together with Dr. Otis Caldwell, Secretary of the A. A. A. S., met in Indianapolis in February to consider this duplication. Our secretary, J. C. Gilman, represented Iowa. A satisfactory arrangement was made whereby the American Institute agrees to work through the Junior Academies in those states in which they exist. This generous coöperation should further the work of the Junior Academies. As the report of the Executive Committee indicates, our Academy representative is given authority to act in the Academy Conference in the erection of a council or governing board for the national interests of the Junior Academy.

The system of awards in the science project competition is changed this year by vote of the Junior Academy Council. Trophy awards in the form of plaques will no longer be given. In place of this the judges will award superior or excellent in the following fields:—physical sciences, biological sciences, mathematics, Junior High School Science, and sweepstakes. Certificates will be awarded to those clubs winning such recognition.

An essay contest was instituted this year which we hope will become a successful project in the work and will interest more boys and girls in the science club work. The radio broadcasts were continued this year with success. The current program is appended.

The annual convention was held on the Iowa State College Campus. There were 56 delegates representing 15 clubs in attendance. The total number of registrations was 200.

The awards given this year are as follows:—

Physical Science

Science Club, Iowa City High School, Iowa City	Superior
Roger Bacon Science Club, Senior High School, Spencer	Excellent

Biological Science

Roger Bacon Science Club, Senior High School, Spencer	Superior
Alpha Beta Kappa Science Club, Cedar Falls	Excellent

Mathematics

Scenic City Science Club, Iowa Falls	Excellent
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Junior High Gen'l Science

East High Chemists, Sioux City East Jr., Sioux City	Excellent
General Science Club, Amos Hiatt Jr. High, Des Moines	Excellent

Sweepstakes

Roger Bacon Science Club, Senior High School, Spencer	Superior
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Essay

Mary Jo Rosenberg, Iowa Falls High School	Superior
Betty Long, Iowa Falls High School	Excellent

The officers elected by the Junior Academy for the year 1939-40 are:—

President, Bruce Phillips, Marion High School
Vice President, Dale Cole, Spencer High School
Secretary, Betty Long, Iowa Falls High School
Treasurer, Eugene Lindstrom, Ames High School

The Committee asks the Iowa Academy to confirm the appointment of the following officers for the next year.

Junior Councilor, John Bliese, Cedar Falls High School, Cedar Falls.

Permanent Secretary, D. C. Stroud, Amos Hiat Jr. High School, Des Moines.

The Committee wishes to express their thanks to Mr. O. C. Kreider of Iowa Falls who has served as Senior Councilor for this year.

Respectfully submitted,

F. E. BROWN

PAUL RISLEY

JAMES KERCHEVAL

J. C. GILMAN

C. W. LANTZ

JUNIOR ACADEMY OF SCIENCE RADIO PROGRAM 1938-39

October 6—J. N. Martin—Diatomaceous Earth and the Tiny Plants That Produce It.

October 13—G. J. Goodman—The Cone Bearing Trees.

October 20—William Kunerth—The Spectroscope in Industry.

October 27—Martin Grant—The Origin of the Common Names of Birds.

November 3—Nellie M. Naylor—The Enzymes of Cereal Grains.

November 10—F. Crescitelli—The Electricity of our Bodies.

November 17—H. L. Dean—The Marijuana Problem.

November 24—THANKSGIVING.

December 1—H. E. Rath—Your "Ticker."

December 8—B. H. Peterson—Lake Waters.

December 15—L. K. Henry—Psychology of Reading.

January 5—L. W. Butler—Lightning.

January 12—R. W. Getchell—A Fly-weight Champion.

January 19—L. P. Sherman—Soybean Industry.

January 26—Norman C. Meier—Scientific Approaches to the Study of Public Opinion.

February 2—C. J. Lapp—Hurricanes.

February 9—W. H. Kadesch—Polarized Light—How Polarized and Why.

February 16—O. E. Tauber—Concealing Coloration in Animals.

February 23—E. R. Becker—The World of Parasites.

March 2—C. S. Gwynne—The Subsurface Wealth of Iowa.

March 16—Alison Aitchison—Geography of the Pin Industry.

March 23—R. H. Heeren—Bacteria as Hitch Hikers.

March 30—J. B. Culbertson—The Air We Breathe.

April 6—Carl F. Jordan—Undulant (Malta) Fever in Iowa.

April 13—Roy L. Abbott—My Compliments to the Cockroach.

April 20—H. H. Knight—Where Insects Live.

April 27—Henry Gilman—Synthetic Organic Medicinals.

May 4—H. E. Jaques—Nature Hobbies.

May 11—E. N. Oberg—Mathematics and Its Applications.

May 18—Lothrop Smith—Some Aspects of Microchemistry.

May 25—Charles Carter—Birds.